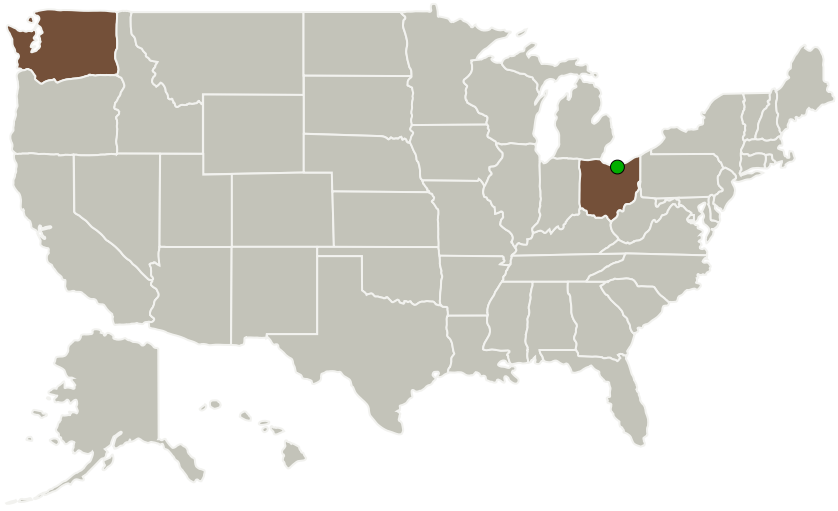
OpenSWIFT-SDR for STRS, Phase II

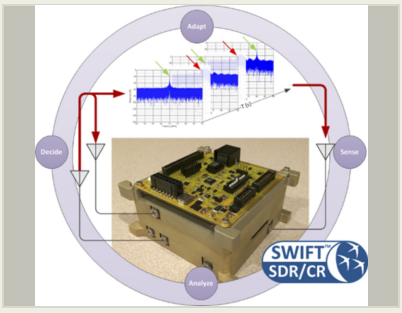
Completed Technology Project (2017 - 2019)

Project Introduction

The OpenSWIFT-SDR Phase II effort will build upon our highly successful Phase I effort by extending the capabilities of the SWIFT-SDR platform and develop technologies needed for NASA?s next generation satellite communication architecture. The SWIFT software defined radio is a proven, SWaP-C (size, weight, power, and cost) efficient RF communications, signal processing, and general computing platform delivering on-orbit reprogrammability and flexibility for space missions. TUI plans to investigate and implement cognitive radio technologies on the SWIFT platform that will reduce mission planning and mission implementation costs by providing a standardized, robust, hardware and software platform that can dynamically adjust to a rapidly changing space communications environment. By using the mature SWIFT radio as a basis for integrating these solutions, and implementing NASA's STRS standard for radio software, TUI is in a strong position to continue research and develop cognitive radio solutions that benefit a wide variety of NASA science missions and future radio customers through tested, reusable, and portable software and firmware.

Primary U.S. Work Locations and Key Partners





OpenSWIFT-SDR for STRS, Phase II

Table of Contents

OpenSWIFT-SDR for STRS, Phase II

Completed Technology Project (2017 - 2019)

Organizations Performing Work	Role	Type	Location
Tethers Unlimited Inc	Lead Organization	Industry	
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
Ohio	Washington

Project Transitions

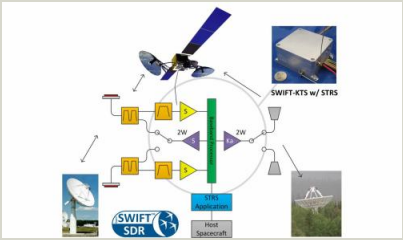
April 2017: Project Start

September 2019: Closed out

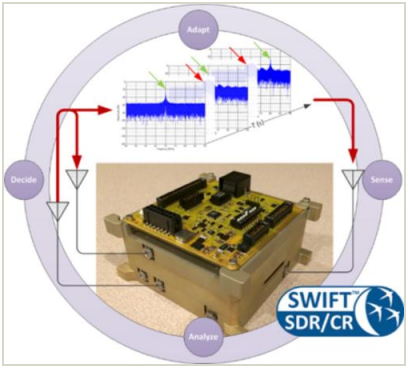
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140904)*

Images



Briefing Chart Image
OpenSWIFT-SDR for STRS, Phase II Briefing Chart Image *(https://techport.nasa.gov/image/127156)*



Final Summary Chart Image
OpenSWIFT-SDR for STRS, Phase II *(https://techport.nasa.gov/image/131189)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Tethers Unlimited Inc

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

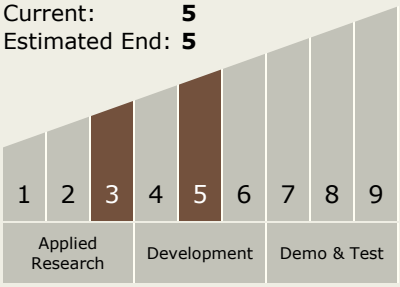
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Tyrel D Newton

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



OpenSWIFT-SDR for STRS, Phase II

Completed Technology Project (2017 - 2019)

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.5 Revolutionary Communications Technologies
    - TX05.5.1 Cognitive Networking

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System